

# EXHIBIT 4

U.S. Serial No. 09/934,773

Substitute paper copy of  
the Sequence Listing

SEQUENCE LISTING

<110> Reiter, Robert E.  
Witte, Owen N.  
Saffran, Douglas C.  
Jakobovits, Aya

<120> PSCA: PROSTATE STEM CELL ANTIGEN AND USES THEREOF

<130> 30435.54USD3

<140> 09/934,773

<141> 2002-08-21

<150> 09/564,329

<151> 2000-05-03

<150> 09/359,326

<151> 1999-07-20

<150> 09/318,503

<151> 1999-05-25

<150> 09/251,835

<151> 1999-02-17

<150> 09/203,939

<151> 1998-12-02

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<151> 1998-03-10

<150> 60/124,658

<151> 1999-03-16

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<151> 1998-12-21

<150> 60/074,675

<151> 1998-02-13

<150> 60/071,141

<151> 1998-01-12

<150> 60/228,816

<151> 1997-03-10

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gcctgcaggt ggagaactgc acccagctgg gggagcagtg ctggaccgcg cgcacccgcg 180
cagttggcct cctgaccgtc atcagcaaag gctgcagctt gaactgcgtg gatgactcac 240
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Glu Asp Cys Leu Gln Val Glu Asn Cys Thr Gln Leu Gly Glu Gln Cys
      35             40            45

Trp Thr Ala Arg Ile Arg Ala Val Gly Leu Leu Thr Val Ile Ser Lys
      50             55            60

Gly Cys Ser Leu Asn Cys Val Asp Asp Ser Gln Asp Tyr Tyr Val Gly
      65             70            75            80

Lys Lys Asn Ile Thr Cys Cys Asp Thr Asp Leu Cys Asn Ala Ser Gly
      85             90            95

Ala His Ala Leu Gln Pro Ala Ala Ala Ile Leu Ala Leu Leu Pro Ala

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100

105

110

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&lt;213&gt; MURINE PSCA (mPSCA)

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 tgcagcctgg accagcacag ttgctttaca tcgcgcattcc gggccattgg actcgtgaca 180  
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 aagaagaaca tcacgtgctg ctactctgac ctgtgcaatg tcaacggggc ccacaccctg 300  
 aagccaccca ccaccctggg gctgctgacc gtgctctgca gcctgttgct gtggggctcc 360  
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&lt;211&gt; 123

&lt;212&gt; PRT

&lt;213&gt; MURINE PSCA (mPSCA)

&lt;400&gt; 4

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Pro Gly Ala Ala Leu Gln Cys Tyr Ser Cys Thr Ala Gln Met Asn Asn  
 20 25 30

Arg Asp Cys Leu Asn Val Gln Asn Cys Ser Leu Asp Gln His Ser Cys  
 35 40 45

Phe Thr Ser Arg Ile Arg Ala Ile Gly Leu Val Thr Val Ile Ser Lys  
 50 55 60

Gly Cys Ser Ser Gln Cys Glu Asp Asp Ser Glu Asn Tyr Tyr Leu Gly  
 65 70 75 80

Lys Lys Asn Ile Thr Cys Cys Tyr Ser Asp Leu Cys Asn Val Asn Gly  
 85 90 95

Ala His Thr Leu Lys Pro Pro Thr Thr Leu Gly Leu Leu Thr Val Leu  
 100 105 110

Cys Ser Leu Leu Leu Trp Gly Ser Ser Arg Leu  
 115 120

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&lt;211&gt; 131

&lt;212&gt; PRT

&lt;213&gt; HUMAN STEM CELL ANTIGEN (hSCA-2)

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Leu Tyr Cys Leu Lys Pro Thr Ile Cys Ser Asp Gln Asp Asn Tyr Cys  
35 40 45

Val Thr Val Ser Ala Ser Ala Gly Ile Gly Asn Leu Val Thr Phe Gly  
50 55 60

His Ser Leu Ser Lys Thr Cys Ser Pro Ala Cys Pro Ile Pro Glu Gly  
65 70 75 80

Val Asn Val Gly Val Ala Ser Met Gly Ile Ser Cys Cys Gln Ser Phe  
85 90 95

Leu Cys Asn Phe Ser Ala Ala Asp Gly Gly Leu Arg Ala Ser Val Thr  
100 105 110

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Phe Gly Pro  
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<212> PRT

<213> HUMAN PSCA (hPSCA)

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Pro Gly Thr Ala Leu Leu Cys Tyr Ser Cys Lys Ala Gln Val Ser Asn  
20 25 30

Glu Asp Cys Leu Gln Val Glu Asn Cys Thr Gln Leu Gly Glu Gln Cys  
35 40 45

Trp Thr Ala Arg Ile Arg Ala Val Gly Leu Leu Thr Val Ile Ser Lys  
50 55 60

Gly Cys Ser Leu Asn Cys Val Asp Asp Ser Gln Asp Tyr Tyr Val Gly  
65 70 75 80

Lys Lys Asn Ile Thr Cys Cys Asp Thr Asp Leu Cys Asn Ala Ser Gly  
85 90 95

Ala His Ala Leu Gln Pro Ala Ala Ala Ile Leu Ala Leu Leu Pro Ala  
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Arg Asp Cys Leu Asn Val Gln Asn Cys Ser Leu Asp Gln His Ser Cys  
35 40 45  
Phe Thr Ser Arg Ile Arg Ala Ile Gly Leu Val Thr Val Ile Ser Lys  
50 55 60  
Gly Cys Ser Ser Gln Cys Glu Asp Asp Ser Glu Asn Tyr Tyr Leu Gly  
65 70 75 80  
Lys Lys Asn Ile Thr Cys Cys Tyr Ser Asp Leu Cys Asn Val Asn Gly  
85 90 95  
Ala His Thr Leu Lys Pro Pro Thr Thr Leu Gly Leu Leu Thr Val Leu  
100 105 110  
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attggatgga ttgatcctga gaatggtgac actgaatttg tcccgaagtt ccagggaag 240  
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tctgaagaca ctgccgtcta ttactgtaaa acgggggggtt tctggggcca agggactctg 360  
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Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Tyr Tyr Ile His  
35 40 45  
Trp Val Asn Gln Arg Pro Asp Gln Gly Leu Glu Trp Ile Gly Trp Ile  
50 55 60  
Asp Pro Glu Asn Gly Asp Thr Glu Phe Val Pro Lys Phe Gln Gly Lys  
65 70 75 80  
Ala Thr Met Thr Ala Asp Ile Phe Ser Asn Thr Ala Tyr Leu His Leu  
85 90 95  
Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys Lys Thr Gly  
100 105 110  
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Thr Pro Pro Ser Val Tyr Pro Leu  
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 ctggcc 426

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 Lys Ala Ser Gly Tyr Thr Phe Ser Ser Tyr Trp Met His Trp Val Lys  
 35 40 45  
 Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly Asn Ile Asp Pro Gly  
 50 55 60  
 Ser Gly Tyr Thr Asn Tyr Ala Glu Asn Leu Lys Thr Lys Ala Thr Leu  
 65 70 75 80  
 Thr Val Asp Thr Ser Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu  
 85 90 95  
 Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys Thr Ser Arg Ser Thr Met  
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 gagaaggggc ttgagtgggt tgctgaaatt cgattgagat ctgaaaatta tgcaacacat 240  
 tatgcgaggat ctgtgaaagg gaaattcacc atctcaagag atgattccag aagtcgtctc 300  
 tacctgcaaa tgaacaactt aagacctgaa gacagtggaa tttattactg tacagatggg 360  
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Pro Gly Gly Ser Met Lys Leu Ser Cys Val Ala Ser Gly Phe Thr Phe  
35 40 45  
Ser Asn Tyr Trp Met Thr Trp Val Arg Gln Ser Pro Glu Lys Gly Leu  
50 55 60  
Glu Trp Val Ala Glu Ile Arg Leu Arg Ser Glu Asn Tyr Ala Thr His  
65 70 75 80  
Tyr Ala Glu Ser Val Lys Gly Lys Phe Thr Ile Ser Arg Asp Asp Ser  
85 90 95  
Arg Ser Arg Leu Tyr Leu Gln Met Asn Asn Leu Arg Pro Glu Asp Ser  
100 105 110  
Gly Ile Tyr Tyr Cys Thr Asp Gly Leu Gly Arg Pro Asn Trp Gly Gln  
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39

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